

IN THE ABSTRACT

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--ABSTRACT OF THE DISCLOSURE

The invention relates to a semiconductor device including a preferably discrete bipolar transistor with a collector region, a base region, and an emitter region which are provided with connection conductors. A known means of preventing a saturation of the transistor is that the latter is provided with a Schottky clamping diode. The latter is formed in that case in that the connection conductor of the base region is also put into contact with the collector region. In a device according to the invention, the second connection conductor is exclusively connected to the base region, and a partial region of that portion of the base region which lies outside the emitter region, as seen in projection, lying below the second connection conductor is given a smaller flux of dopant atoms. The bipolar transistor in a device according to the invention is provided with a pn clamping diode which is formed between the partial region and the collector region. Such a device has excellent properties, such as a short switching time and a saturation collector-emitter voltage which is not too high, while having a low, non-variable and well reproducible leakage current, unlike the known device. The reduced flux of dopant atoms of the partial region is preferably realized in that the partial region is given a smaller doping concentration and/or thickness than the remainder of the portion of the base region which lies outside the emitter region. In a favourable modification, a region provided simultaneously with the emitter region is present between the partial region and the second connection conductor.--.